

# Salinity and Sustainability in the San Joaquin Valley

Sarge Green, Manager  
Westside Resource Conservation  
District

# Salinization of California Groundwater

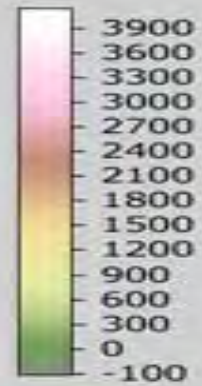
## Sources:

1. Weathering of igneous, metamorphic and sedimentary rock parent materials = soluble minerals.
2. Evaporation-transpiration.
3. Quality of surface water supplies.

# Locations in California

- Imperial Valley/Salton sea
- Tulare basin
- Lower San Joaquin river/delta estuary
- Santa Ana river basin
- Various inland GW basins
- Coastal seawater or brackish water intrusion;  
Bay Area, Salinas River, Pajaro River, Santa Clara River, Oxnard Plain, Orange County, others?

## Shaded Relief Map of California



100 miles

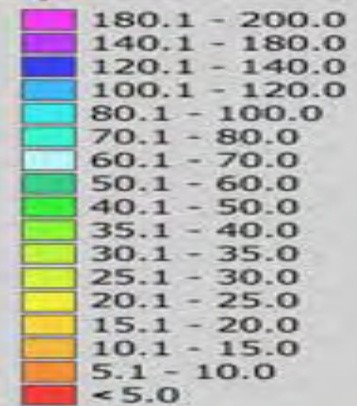




# Average Annual Precipitation in California

(With Shaded Relief)

Precipitation in Inches



100 miles

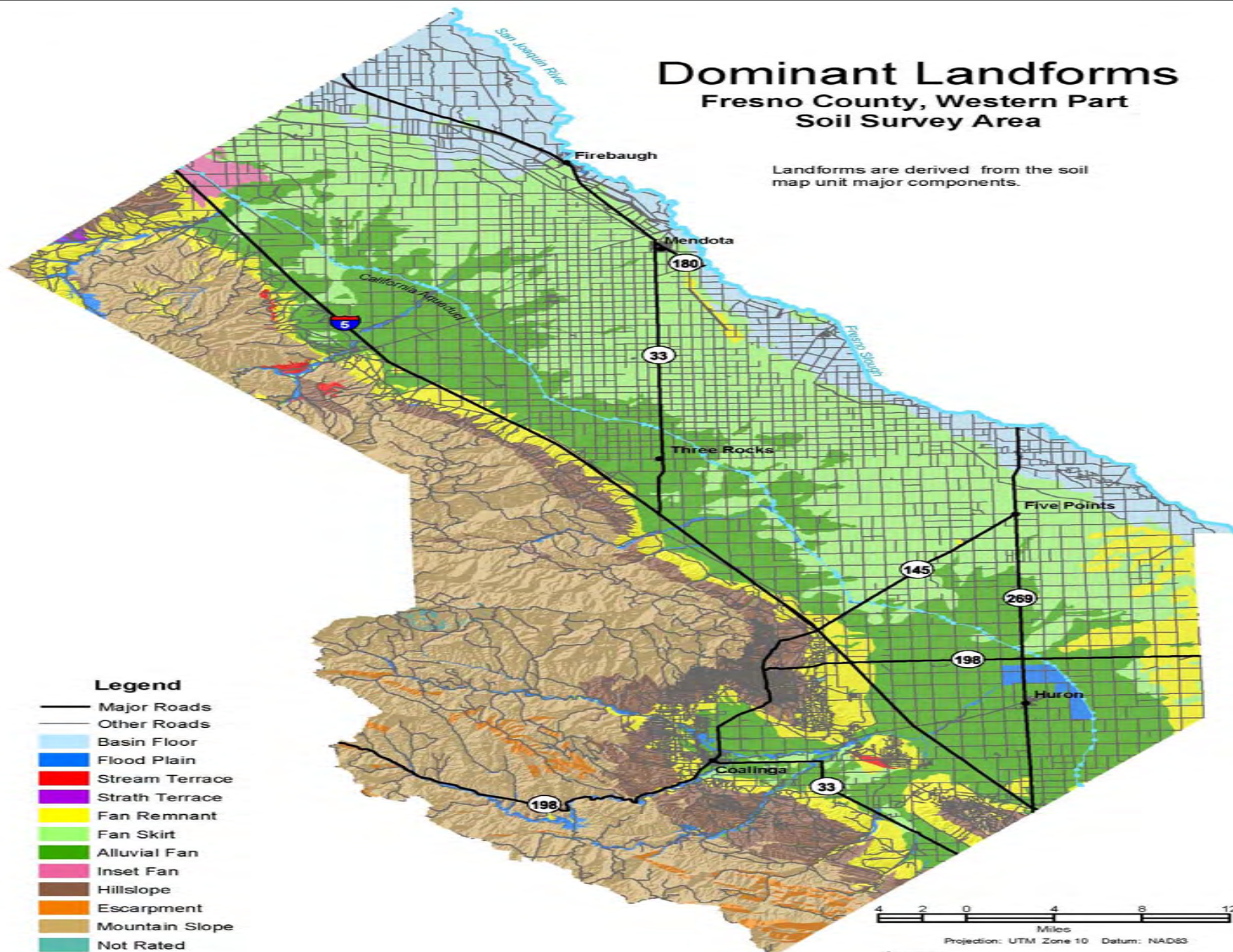


# Dominant Landforms

## Fresno County, Western Part

### Soil Survey Area

Landforms are derived from the soil map unit major components.



#### Sources:

Soil Properties and Landforms: Arroues, Kerry. 2002. Fresno County, California, Western Part Soil Survey.

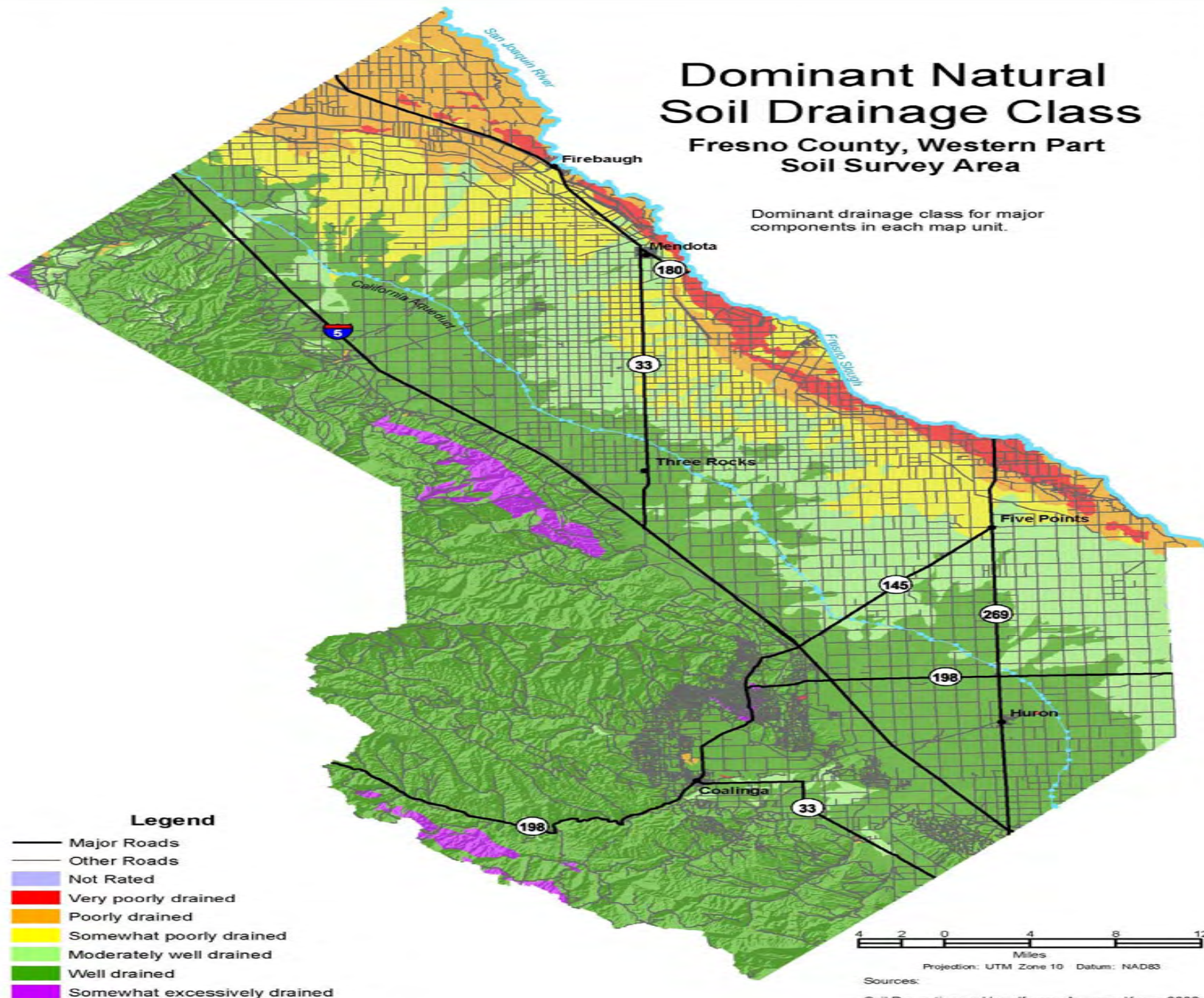
Roads, elevation, and cities: State of California, Teale Data Center. 1999.



# Dominant Natural Soil Drainage Class

## Fresno County, Western Part Soil Survey Area

Dominant drainage class for major components in each map unit.





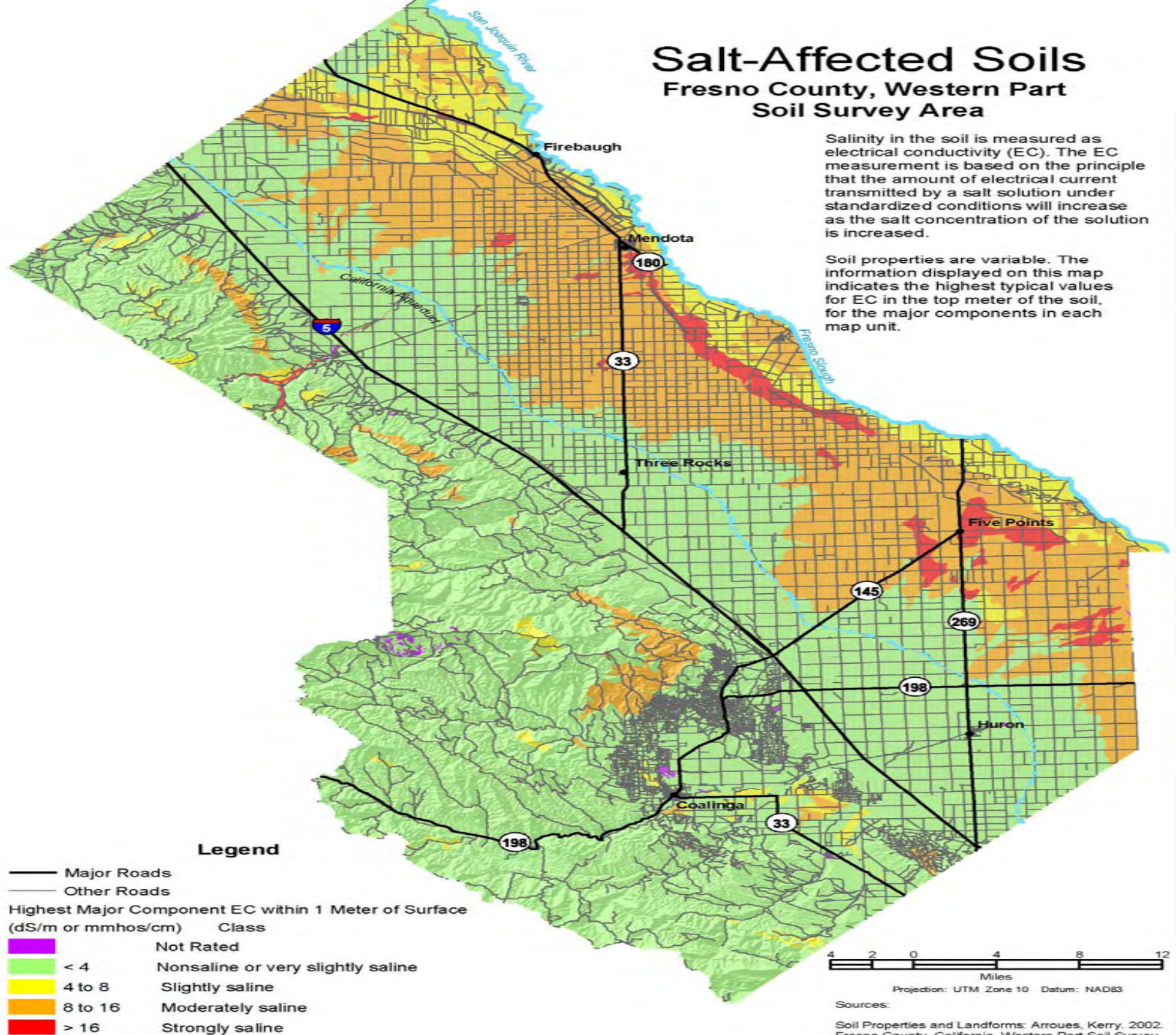
# Salt-Affected Soils

## Fresno County, Western Part

### Soil Survey Area

Salinity in the soil is measured as electrical conductivity (EC). The EC measurement is based on the principle that the amount of electrical current transmitted by a salt solution under standardized conditions will increase as the salt concentration of the solution is increased.

Soil properties are variable. The information displayed on this map indicates the highest typical values for EC in the top meter of the soil, for the major components in each map unit.



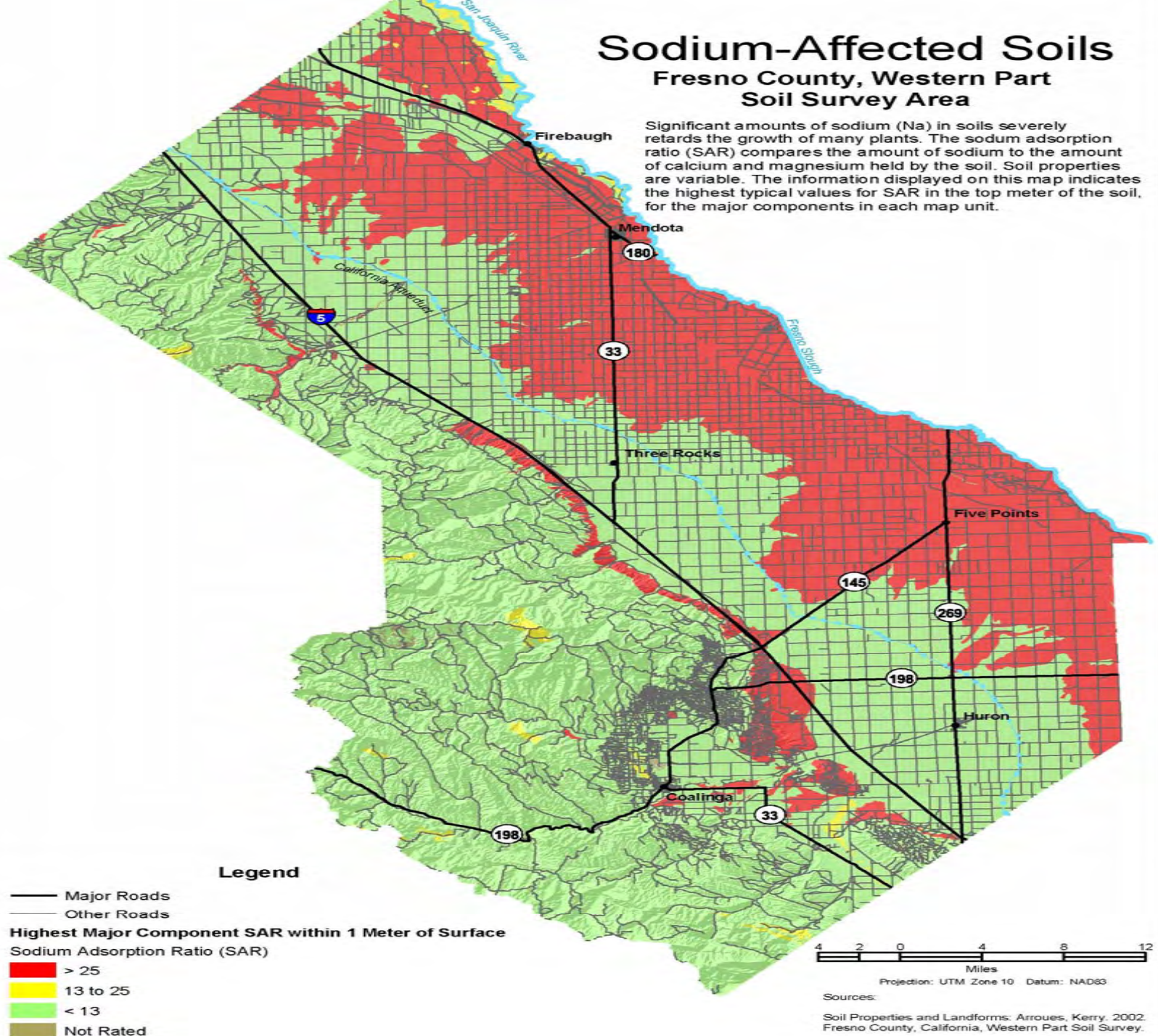


# Sodium-Affected Soils

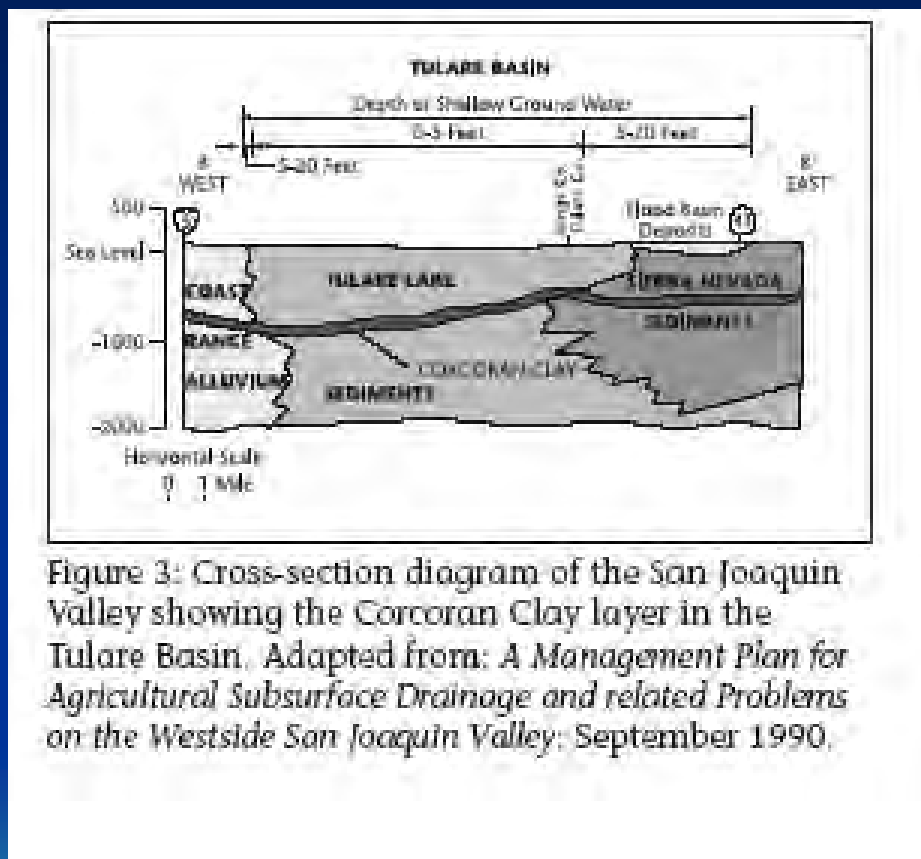
## Fresno County, Western Part

### Soil Survey Area

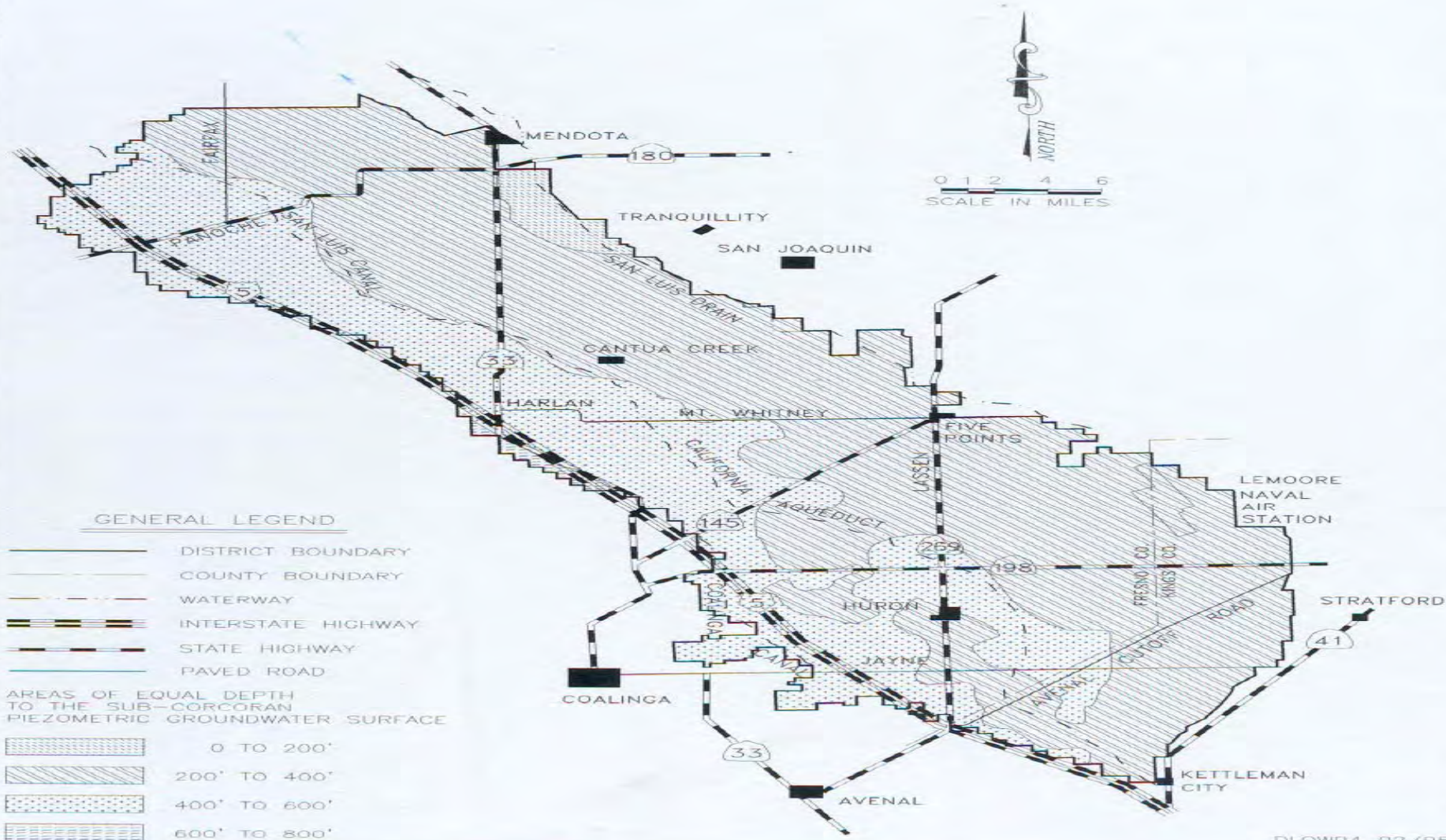
Significant amounts of sodium (Na) in soils severely retards the growth of many plants. The sodium adsorption ratio (SAR) compares the amount of sodium to the amount of calcium and magnesium held by the soil. Soil properties are variable. The information displayed on this map indicates the highest typical values for SAR in the top meter of the soil, for the major components in each map unit.



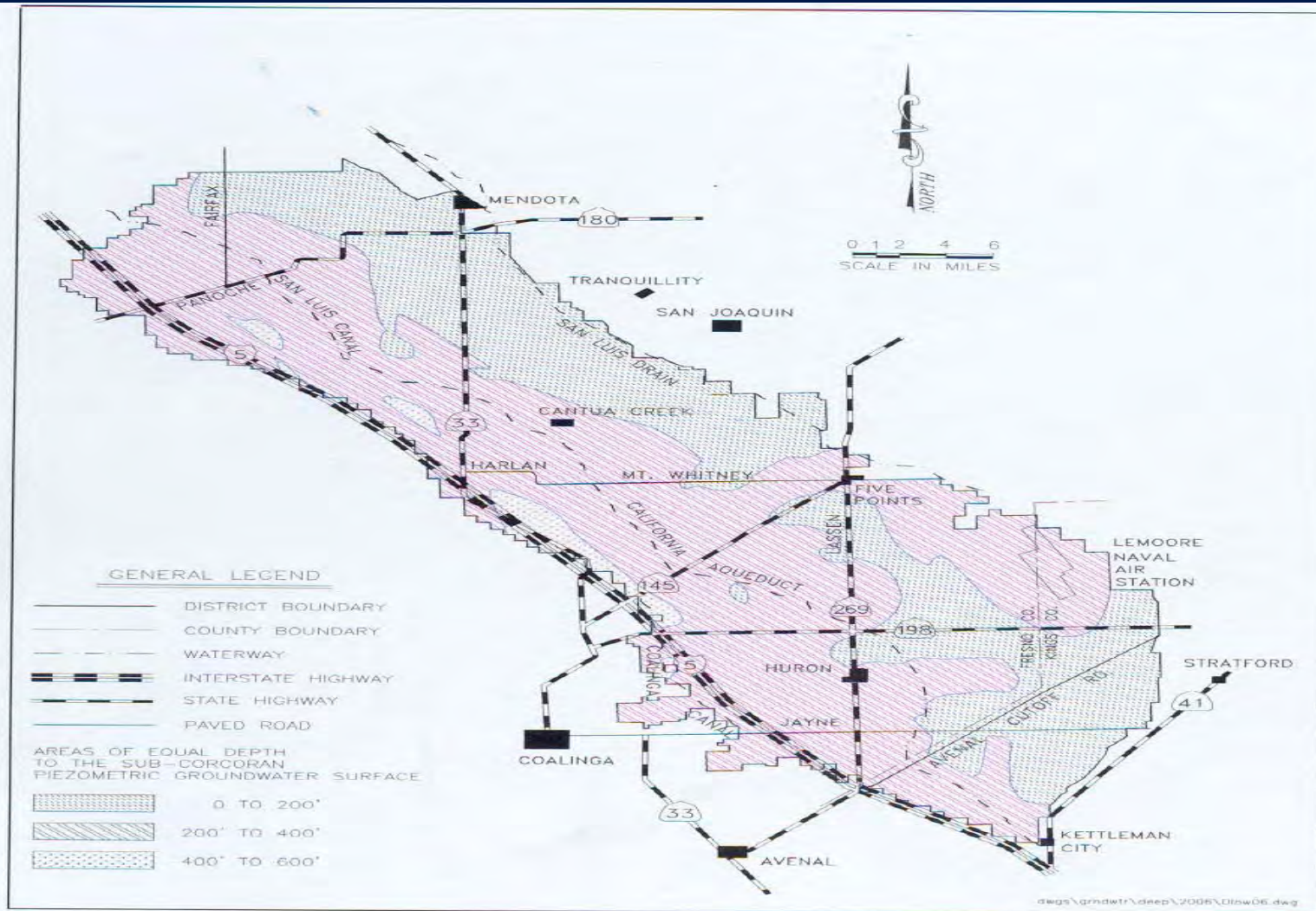
# Corcoran Clay – location and importance





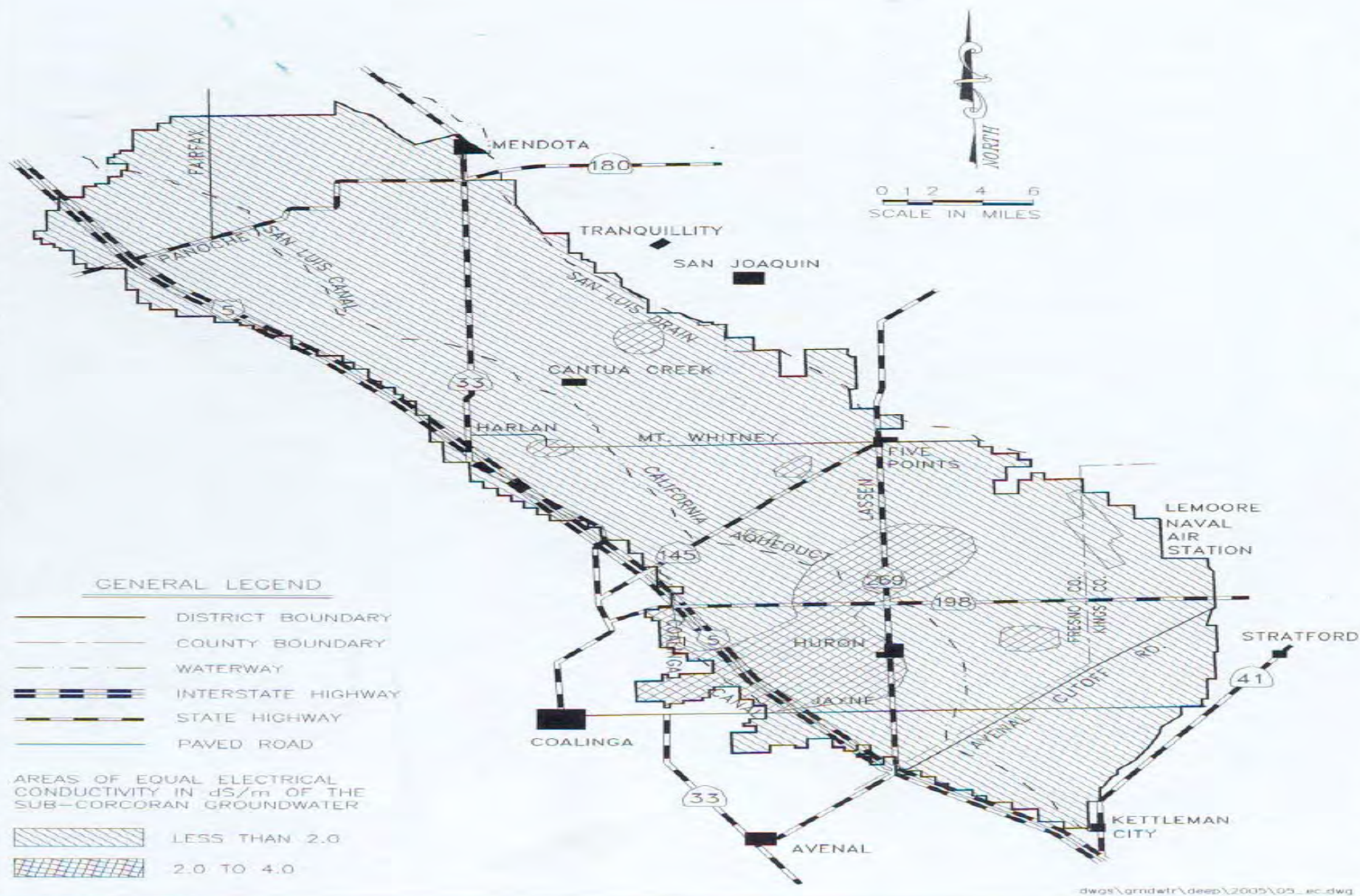


**Figure 6. Depth to Sub-Corcoran Piezometric Groundwater Surface, December 1994**



**Figure 7. Depth to Sub-Corcoran Piezometric Groundwater Surface  
December 2006**



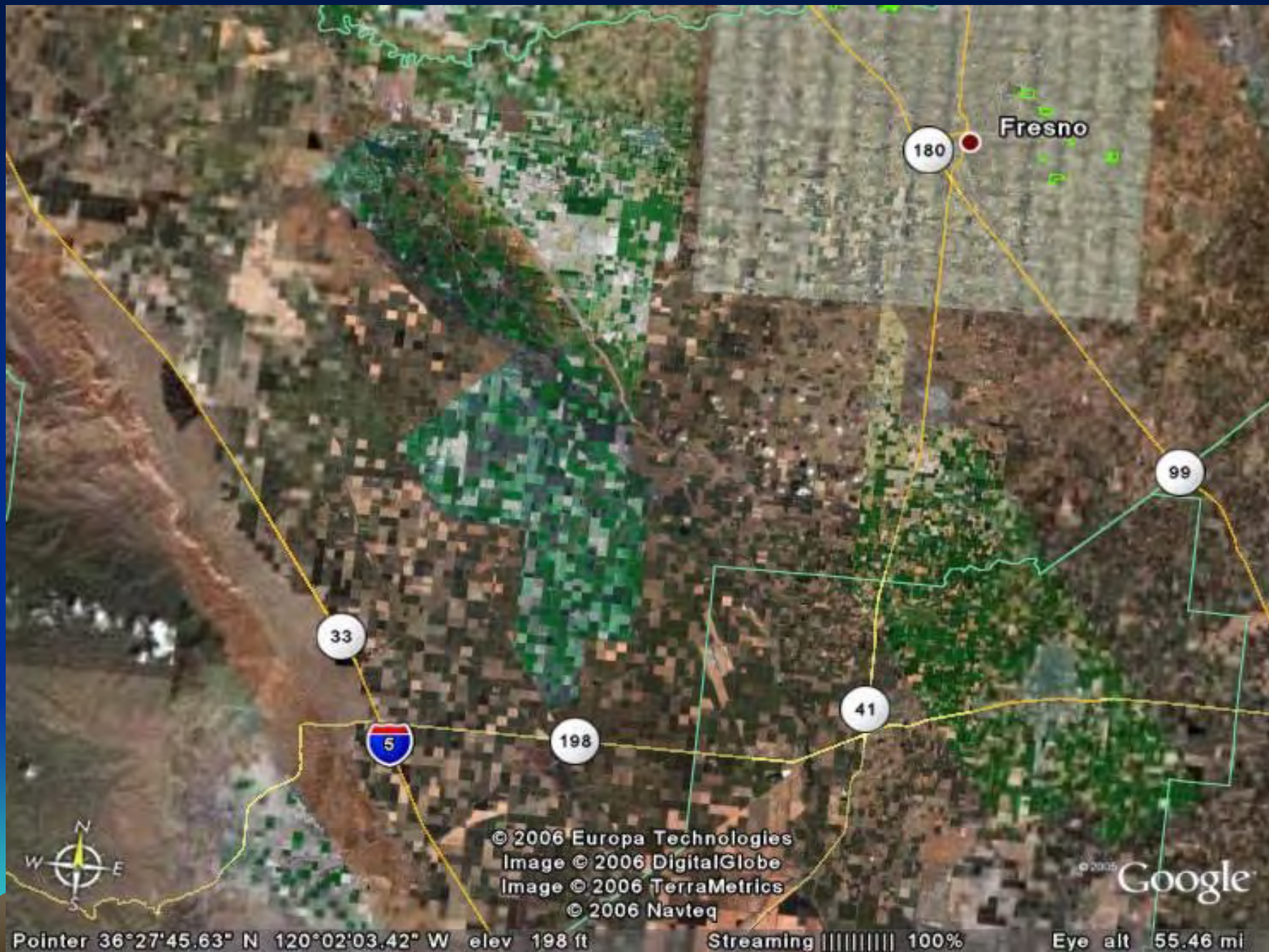


**Figure 3. Electrical Conductivity (dS/m) of Sub-Corcoran Groundwater, December 2005**

# How can it be managed?

- Speakers will discuss some of the current options and techniques as well as the shortcomings of science and policy to attain adequate salt management in California's water.





Fresno

180

99

33

5

198

41

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Image © 2006 TerraMetrics  
© 2006 Navteq

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Pointer 36°27'45.63" N 120°02'03.42" W elev 198 ft Streaming ||||| 100% Eye alt 55.46 mi



# Solar Evaporator





# San Luis Drainage

Feature Re-evaluation • Public Hearings

## Comment Card

(18)

Name	Ali Jordan-Brown	Address	842 Main St.
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Telephone No.		Fax No.	805-785-0528 daubineonly

Please provide your comments below – Please print legibly  
You can also attach your written comments

I-22-1

I cannot fathom why this project is even being considered! This is about as environmentally STUPID as can be! This is our home, as is our ocean coastline. Fresno should take care of their own problems. This project is akin to giving my virgin daughter to bathe in sewage and be draped by gang hangers.

We must protect our ocean as much, if not more than our virgin children.

You are corrupt demagogues and deserve to die of the toxins you want to dump in our home. May it happen to you soon.

Ali Jordan-Brown

Comments must be received by close of business on Monday, August 1, 2005:

## RESPONSE TO COMMENT I-22

I-22-1

Comment noted. No response necessary.

# REFERENCES

- Western Fresno County Soil Survey – USDA-NRCS Kerry Arroues, Hanford, CA
- Westlands Land Purchase Program – Westland Water District web page
- IFDM for Farm Operators – CSUF-CIT web page.
- Sarge Green = [sgreen@csufresno.edu](mailto:sgreen@csufresno.edu)